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ORIGINAL ARTICLES

WHAT IS PSYCHOANALYSIS?*

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Psychoanalysis is what the name implies—an analysis or study of the psyche or mind. It is neither an ism nor a cult but a rational scientific procedure elaborated specifically for the understanding and treatment of functional nervous disorders.

To Sigmund Freud of Vienna the credit is due for the advent of this newer psychology. With Freud and his followers the psychological viewpoint shifted and whereas formerly mental processes were studied and correlated largely in terms of output—the results of brain activity—the psychoanalytic doctrines laid particular stress upon the causes and reasons that lay behind and underneath the workings of the mind. Psychoanalysis is always searching for the reason why. Why a person thinks thus or so, why he behaves in this or that curious manner, why he is tormented by fixed ideas and obsessions, why his emotional life is unstable or inadequate, why he is miserable, mentally sick, unsuccessful, and does not harmonize with his surroundings and fellowman—all these, and innumerable similar maladjustments, are constant question marks that analysis attempts to answer.

In recent years the interest in psychoanalysis has grown by such leaps and bounds that the subject now has over a thousand books and articles to its credit, and its principles are not merely applied to abnormal or unusual mentality but they are used as a method of interpretation in every field of human endeavor which is the direct result of mind output. Thus art, pictorial and plastic, can be analyzed. Novels, drama and poetry may be subjected to analytical interpretation. Pedagogy is being linked more and more with psychoanalytic principles. Business efficiency is being enhanced by the study of the individual's psyche. In short, the kind of work we do and the way we do it reflects the subtle workings of our inner selves which are analyzable and capable of simplification.

The mind is a machine like any other organ of the body, but it is a very complex machine. We find, however, that all of us think, act, and feel about alike under like circumstances and thus psychoanalysis has been able to establish certain relationships between cause and effect which, in toto, constitute the psychoanalytic fundamentals. We all possess, for example, a most powerful mother love, and this so-called Oedipus complex is studied in every case that is analyzed.

Every individual is born with instincts—libidinous cravings or urges of desire the analysts say — that seek fulfillment in the world outside. Among the libidinous desires are the nutrition urge, the reproductive urge, the self-preservation urge, and the ego urge. There are many other urges besides these four, but these particular ones are compelling forces in everybody. Few have difficulty in expressing with satisfaction the instincts of nutrition and self-preservation, but a surprisingly large number of people are thwarted in one way or another in attempting to satisfy their reproductive and ego cravings. Sometimes, too, the reproductive and ego urges appear in conflict, one with the other, and to this end our necessary social structure and moral codes may be important factors.

Man still possesses many primitive animal tendencies that try to assert themselves but which his consciousness holds in check because such behavior is forbidden by the standards which people have set up as spelling the greatest good to the greatest number.

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His instinctive cravings, therefore, come into conflict with these standards and the result is that he tries to subdue them, push them aside, forget them. In psychoanalytic parlance such an individual suppresses his desires from his conscious mind into that deeper, underneath part of his mentality, which is termed the subconscious or unconscious mind.

It has been found that suppressing strong emotional cravings (succeeding in forgetting them, as it were), necessary and laudable as that may be for the individual's immediate adjustment and happiness, does not put an end to his difficulties. If the primitive, emotional strivings are strong they attempt to reassert themselves in consciousness — they again try to gain recognition and fulfillment. Then, when unable to accomplish this, or when resuppressed again and again, they may form maladjustments in the unconscious which are called complexes. It is these complexes that cause the symptoms of the functional nervous diseases, the neuroses.

It must not be thought for an instant that the psychoanalytic doctrines advocate nonsuppression and lawlessness of thought or behavior. On the contrary, an analysis of one's self is the greatest character builder there is, for it teaches the subject to face the facts and desires of his life squarely, honestly, and unflinchingly, so that he may know what he really is, what he really feels, and what he actually would like to do. Such a "heart-to-heart" talk with oneself naturally leads to right-thinking and right-living, for not only does it bring to light (to conscious recognition) the many things that people are ashamed of and which they hide, disguise, and dare not contemplate, but it also points the way by which their animal cravings can be substituted, socialized and idealized.

Strange as it may seem, the salient feature of the psychoanalytic cure depends upon bringing the submerged, suppressed and unconscious complexes to conscious recognition. The patient does not know what the complexes are that have produced the symptoms of his neurosis. He may consciously know or suspect some of his complexes but these cannot be the ones that have metamorphosed themselves into the symptoms. If he really knew what his essential complexes were he could automatically cure himself.

Self-analysis is possible and often very helpful provided one is conversant with psychoanalytic principles, the method of procedure, and is capable of abstracting himself sufficiently to judge impartially. But the difficulty is that everyone tends to make excuses for himself and will halt his psychoanalytic probe far short of the depth which it is necessary to go in order to bring to light the offending causes. Especially in the well-defined neuroses, it takes a trained and efficient analyist—an outside authority—to bring the complexes to the fore, establish order out of chaos, and accomplish the desired results.

It has been found that childhood forms a most favorable soil for the sowing of the seed that grows into the neurotic tree of adulthood. In its earliest years the child is absolutely dependent upon its parents, guardians and teachers, and by the time adolescence is reached it has passed through a critical stage of doubt and uncertainty, a stage of groping for the true facts of the life that confronts it, of trying to tear away from the parent stem so as to stand on its own feet and face the world alone and unafraid. The first conflicts between emotional, self-centered and often selfish strivings, and the ways of the world outside are to be found during childhood years — hence, also suppressions are common. The child soon learns that it must hold itself in check in order to be acceptable to other people. In this struggle of self-control one may find some of the earliest root complexes.

The very first step in psychoanalysis is to take a most complete and detailed history of the case. The influences derived from the father, mother, brothers, sisters, relatives—all may offer important data. The strivings and ambitions, the successes and failures, must also be taken into account. The love life of the patient is likewise an inquiry of consequence.

This brings to mind a rather frequent criticism against psychoanalysis. It is said that the method lays too much stress upon sex strivings. As a matter of fact, the actual sex life of an individual plays a comparatively insignificant roie in his daily routine while his love-life, of which sex is only a part, constitutes one of his most insistent strivings. But love-life embraces all the inner reachings and towerings through which a human being attempts to commune, and enter into accord with, the nature that surrounds him. The love-life does not merely take in the opposite sex but embraces as well relationships with the same sex, trees, flowers, and anything towards which emotional interest is directed.

A psychoanalysis is a long and sometimes tedious procedure. Two to three months' work, meeting the patient three times a week for from three-quarters of an hour to an hour is the average course of treatment. Some cases are thoroughly analyzed within a shorter time—others take longer. The age of the patient, the readiness with which he cooperates, and his general level of intelligence are all factors in this regard.

Neurasthenias, hysterias, compulsion and anxiety neuroses lend themselves particularly well to the analytic method. Beginning psychoses may often be prevented from developing further by psychoanalysis and no system of psychology yields more lasting results when used in connection with a mental hygiene program for the prevention of nervous breakdowns or their recurrence. Indeed, any individual may profit immeasurably by a psychoanalysis, whether he tends to be neurotic or not.

When complexes that cannot be satisfied are brought to conscious recognition, a sort of substitution — sublimation — is offered which will turn the libidinous strivings into healthy, efficient and normal channels. Sublimation is the last thing taken up in an analysis and, in many ways, it calls for the greatest degree of expertness and understanding of normal psychology and characterology. When primitive instinctive urges are sublimated and brought into harmony with social institutions and ideals the need for their expression by conversion into symptoms not only ceases to be, but a recurrence of such strivings—in other words, a relapse of the neurosis—becomes highly improbable.

Many of the principles of psychoanalysis are applicable to the daily contact of the general practitioner with his patients. A working knowledge of analysis becomes a valuable asset in dealing with human material as the doctor does. Having an insight into the workings of the mind leads to a sympathetic understanding on the part of the physician and a feeling of confidence on the part of the patient that makes for more speedy and lasting recovery.

A short paper, such as this, can serve only as an introduction, and a very meagre and sketchy one at that. There are many treatises on psychoanalysis that are written especially for the medical man. There are others also written for the layman which contain many practical suggestions. It is the fond hope of the writer that these few lines may stimulate the reader to further consideration and deeper study of a method of psychology that has given a new and encouraging insight into the manifold workings of the human mind.

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SOME OBSERVATIONS ON LOCAL ANESTHESIA.*

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The surgical ability to successfully operate under a general anesthetic does not equip that surgeon for scientific survey under local anesthesia. I note this as a common error, and one, in some instances, never corrected.

I wish to refer briefly, but with emphasis, to the necessary instrumental equipment. It took very little experience to satisfy myself that syringes, needles and scalpels found in

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hospitals were totally inadequate to this special surgery. The syringes, due to improper care, were either corroded, leaky or otherwise unfit for service; the needles were rusty, their points dulled from use or careless handling, and the lumen partially or entirely obliterated; the scalpels were simply abominable, certainly not adapted to the clean, smooth division of living tissues on a conscious patient. I began to supply my own equipment. Many different makes and sizes of both syringes and needles were bought and tried out. Today I am using exclusively a 10 c.c. record syringe, which I care for myself. This syringe is ordered sterilized in carbolic-alcohol. If you allow nurses to boil them you will replace many broken glass barrels. The record syringe will stand boiling, but they won't stand for it with the piston in the barrel and they don't take kindly to being dumped into boiling water. In order to avoid these pitfalls of indifference and carelessness, I have stopped the "boiling" mistake, but am candid to say that I prefer sterilization by boiling.

If you put the syringe, separated into its component parts, into cold water or warm water and gradually bring the water to boiling point, there would be no accidents.

As to the proper care, it is only a matter of common sense and time. Dry your syringe carefully and thoroughly, making sure no moisture is left anywhere. The syringe is then put away with the piston out of the barrel. If you have more than one syringe, it is necessary that you know which piston belongs to which barrel. Parts of record syringes are not interchangeable. Nurses do not appreciate this fact at all and I find very few doctors conversant with it — in fact a traveling salesman of long experience had to be shown before he would believe it. This is not a small matter, but is knowledge necessary to competent surgery under local anesthesia. In order to protect against this error I have each part of every syringe marked with a corresponding number. The needles constitute, in my mind, one of the most essential adjuncts to good work. I have bought and used all kinds of needles, viz: gold alloy, platinum iridium, steel, etc. I have also tried needles of different calibres, various lengths, and different points. At last I have settled down to just two needles. These are made of steel and have the universal taper-cutting point. One is a 26 gauge and 1¼ inches long; the other is 22 gauge and 2 inches long. If your needle is free of rust, the lumen free and the point not blunted or broken, the first puncture can be done, in a large majority of cases, without any evidence on the part of a narcotized patient of pain. There is, of course, a nack to this first puncture which is acquired only by experience.

Needles are cutting instruments. It is absolutely necessary to bear this in mind at all times or your patient suffers and you are disgruntled. Needles cannot be resharpened for this work. Once the cutting point is bent, blunted or broken, throw that needle away. Once the slightest rust appears or the lumen is even partially obstructed, throw it away. These needles only cost $2.50 a dozen and, if needed, you can afford to use a new one for each case. Our rule is that the second any needle looses its high-point efficiency, it is discarded. No chance is taken of getting hold of it again. One needle may go through one or possibly more operations, another one blunts or chokes after a few minutes' use. Skins differ materially and a tough skin blunts the delicate point very quickly.

I have discussed the above in detail—not for the benefit of the surgeon experienced in local anesthesia, but for the man who uses it only occasionally or has, as yet, not used it at all. In fact, this entire discourse is an attempt to benefit the inexperienced man. I have, in my library, many books on this subject, but these facts are not clearly set forth in any one of them. This knowledge has been gathered over a long experience and after many errors.

If a used needle is fit to be held for further work it is first thoroughly dried, then the wire, dipped in 3-in-1 oil, thoroughly oils the lumen.

Each surgeon has his own method of

handling his scalpels. I dry sterilize my scalpel in a test tube and when that knife is once used, it is sent to an instrument company to be resharpened. It is the rule, rather than the exception, to use two and sometimes three scalpels in one operation. A razor-edge scalpel and sharp scissors are absolutely essential to good surgery under local anesthesia.

Keeping needles and syringes together in a compact package promptly became a necessity. I had a box constructed that accommodates four 10 c.c. record syringes and two trays of needles carrying six dozen needles. There is additional space for a six-ounce bottle, an eye cup, a small bottle of oil and one ounce of adrenalin chloride solution. This case is not a necessity, but certainly convenient to a surgeon doing much of this work. I no longer worry over good needles or syringes. The equipment is kept up to standard at all times and it is only necessary when needed to take along a small, compact box in place of several packages.

Every doctor should read Dr. George Crile's Kinetic Theory of Shock and Anoci-Association. The subject matter reads like a novel and is saturated with sound sense and helpful hints. Due to various causes over which most of us have no control, very few can equal Dr. Crile in the carrying out of his anociation, but we can at least emulate his example.

The most difficult stumbling block I am forced to contend with is the handling of the patient. In this matter we are dependent on numerous people and the attitude of all or even one of these people can influence a patient unfavorably for a successful operation. The reception at the front door, seeing the patient to bed, taking him to the operating room, the attitude of everybody throughout the operation; a quiet return to bed; cheerful assurance during the aftercare; in all these details is the surgeon largely dependent on the executives and nurses of the institution. It is, I find, an impossibility to obtain uniform team-work in a general hospital. Not with any spirit of criticism, but, as a practical illustration, I will cite you an example. I have been doing work in a particular hospital a long time. I had discussed this work with the head nurses; also the operating-room nurse. I had given detailed instructions regarding these particular cases. This patient was referred for operation under local. Following my rule I went in and prepared for the operation. You can imagine my surprise when the patient walked into the operating room, laughing and joking with the attending nurse. After the operation, which proved very unsatisfactory, I learned that this man received his morphine and scopolamin while sitting up in a chair reading the morning paper. He was then allowed to parade up and down the hospital corridor in a bath robe and, when called for, walked to the operating room. Of course, no one assumed responsibility, and everybody had an alibi. The result was poor work and an unnecessarily shocked patient. The fact that the operation, in this case, was simple and the shock unnoticeable does not relieve the inexcusable error. At the time morphine and scopolamin is administered, all noise and conversation should cease; the room should be darkened and the patient encouraged to relax. His transportation to the surgery should be quiet and gentle, a cold, wet cloth having been laid over the eyes. The surgery should be orderly and quiet. All nurses, doctors and instruments should be ready. A good rule is "that as long as the patient is in the operating room any necessary talk shall be done by the surgeon only."

A great majority of people with surgical conditions operable under local anesthesia can be successfully so operated with the necessary cooperation. Lack or neglect of such cooperation will cause trouble to the surgeon and needless shock to the patient. There does exist, among a great number, a type which is totally unfitted for this work. In these cases gas analgesia or, if required, a small amount of ether will suffice for the work. While I am guilty at times of not having an anesthetist present, I am convinced it is bad practice. I have seen an individual ordinarily impossible to operate under local

anesthesia receive just enough gas for analgesia and from that time on have the work completed under local without further general anesthesia. The gas mask is kept in position with rebreathing. A competent anesthetist, with a proper understanding and a desire to help, will surprise the surgeon with the small amount of general anesthetic he actually uses. This is simply another one of the many spokes to the wheel. Each spoke is strong or weak, in terms of local anesthesia, according to how much it helps or hinders.

Much has been written about the necessity for sharp instruments, clean dissection and the avoidance of hand surgery and rough manipulation. I refer to it in this paper simply to emphasize it. No rule is perfect, but if at the beginning of the operation under local anesthesia you will take a tissue forcep yourself and hand one to your assistant it will act as a caution to both to keep their hands out. This sounds like a small matter hardly worth the mention, but I assure you this one little point looms up bigger and bigger as I continue to practice it.

Experience has taught me to try and master one method of local anesthesia and in the main stick to it. The simplest is infiltration. As you progress in familiarity with the method you will widen its application. Nerve blocking has its legitimate place and we use it when necessary. When we do use it the book is freely consulted and all measurements carefully made. Most beginners err seriously in a failure to do this for fear of adverse criticism. Most probably the man that would so criticize couldn't do the work at all or would bungle it unmercifully.

There have been times in my experience when I have found it necessary to expose under infiltration the nerve I desired to block. I experienced no shame in this but, instead, had the satisfaction of knowing that I had not only caused no pain in the exposure, but I was sure I had actually injected the nerve. Nerve blocking, if performed with accuracy and dispatch, requires special knowledge and large experience. Even paraneural injections are uncertain in the hands of the average man.

My experience has not lead me to concur with the surgeon who claims that the operative time is no longer under local anesthesia than under general. The first and one of the most difficult things I had to learn in the doing of this work was: *"Take your time."* The main fact to bear in mind is that time is not an essential factor. However, there are complaints, which are referable to time, and these are the discomforts of the operating table for a necessarily awkward position. The hard operating table is a great bugbear and one I have so far failed to correct. It is quite simple to make a surgical table more comfortable and it's useless for me to waste words in telling you how, but in a general hospital over which I have no personal control I have so far failed in having it done.

Those in charge of the surgery are not, as a rule, enthusiastic about operations under local anesthesia. The little extra service and the quiet incident to this work annoys the average nurse. The easiest way, with the least restrictions and the shortest time, is ordinarily the most attractive method to the large majority. The constant changing of nurses in the surgery is another pitfall. These difficulties can be avoided only when the chief surgical nurse is of a higher and superior type—*"the great exception."*

The position on the table can be controlled by the surgeon and it is his or his assistant's duty to give it personal supervision. The chest, kidney and throat cases furnish examples of the most difficult ones to make comfortable. Patience and advising with the individual to be operated accomplishes much. During the course of the operation permission for the patient to change his position even slightly is very helpful and does not materially prolong the work.

The operating room, the instruments arranged and covered with a sterile towel, the nurses and doctors scrubbed and gowned should all be accomplished before the patient is brought in. The moving around of tables, the rattling of instruments, the going through

of solutions and the putting on of gloves and gowns is not only hard on the average patient but terrifying to many. If everything and everybody is ready and the surgeon, who already has the confidence of the patient, meets him or her in the surgery with a softly-spoken word of encouragement and the work proceeds in an orderly, quiet way, much has been gained towards a successful completion of the operation. Narcotized patients should not converse and, if the surgeon is tactful, will not, providing the rule obtains that no one speaks after the entrance of the patient except the surgeon.

Much is written about the strength of solutions, the special drug used and the amounts that can be safely injected. I started with novocain. I have never seen any reason for changing. We use a one-half per cent solution almost entirely. At the time of operation, 4 or 5 minims of a 1-1000 adrenalin solution is added to each ounce of the novocain solution. In goitre cases the adrenalin is ordered left off. Adrenalin solution not only diminishes capillary bleeding, but also increases the anesthetic effect of the novocain. In infiltration anesthesia, with this strength solution, we have come to the place where the amount of solution used is no longer worried about. I have never had a patient show the slightest reaction to the drug. I am sure as much as 4 to 6 ounces or more are consumed in many operations. Some solution leaks from the syringe; some of that infiltrated leaks out after the incision. Extended use convinces me that stronger solutions are not required. In addition to the novocain solution we use quinin and urea solution of 1-6 per cent strength. There has been much criticism regarding the use of quinin and urea solution in local anesthesia. It is claimed that necrosis and suppuration presents in a large number of the cases in which it is used. We have found this statement totally unfounded in our experience. Accurate information was kept in nearly two hundred routine cases. Two very fat abdominal walls showed fat necrosis and had to be drained. I have never felt that the quinin-urea was at all responsible in these two isolated cases when such a large number showed no evidence of trouble. We have always been very careful about two things in its use. (1) The solution is never driven into skin, fascia or muscle. (2) It is always injected at a distance from the incision. Our rule is to inject under the skin only, but in liberal amounts. In exceptional cases we may make a further injection just beneath the fascia. Many, no doubt, will feel that the solution is infiltrated into the fatty layer. This is probably so, and as the fat layer is normally the easiest to break down we should expect trouble. My only answer to this is we don't experience any trouble. If quinin-urea solution is driven into fascia you can look for bad results. My own idea is that as fascia is not expansible the circulation is cut off by the pressure of the solution and pressure necrosis, not chemical injury, results.

We are rather cranky and particular about the preparation of these solutions and in this detail follow closely Dr. Crile's instructions. I feel that this has much to do with the subsequent healing. I realize that the tablets are convenient and in common use. I don't object to their use in certain minor cases, but for extensive work I must admit my prejudice. Ease of preparation opens the door to carelessness.

Right here I wish to mention an interesting phenomena noted by us. For work on fingers we inject around the base of the finger and not at the site of the intended incision. Adrenalin solution is not used. It is the rule to see absolutely no bleeding from the incision for several minutes. The only possible explanation is that the pressure of the fluid temporarily acts as a tourniquet. The circulation is restored in four or five minutes and no harm results. No doubt others have noticed this same thing, but I have never read about it or heard it mentioned. It might unnecessarily disturb the beginner.

Any solution should be injected slowly, but this rule is to be especially observed in the use of quinin-urea. There is a momen-

tary burning pain at the first contact of this solution. If you inject very slowly the average patient will make no complaint and the hypersensitive one only a little. If my patient does complain I make a quiet, and brief explanation, stressing the fact that the pain is only momentary and immediately relieved by the anesthetic solution. This explanation, as a rule, will satisfy the patient and the remainder of the injection can be accomplished without trouble.

When dealing with acute suppurative conditions like boils, abscesses, carbuncles, felons, etc., don't inject any solution into the inflamed area. Surround the inflamed area completely, being especially careful that the deep tissues underneath are freely infiltrated. After this injection, wait at least five to ten minutes before incision. If it's a felon or suppurative process in a finger, simply surround the base of the finger and wait. I promise you that if your infiltration has been properly done the work will prove absolutely painless.

Much of your success will depend on how carefully you make the so-called wheal or skin bleb. I always make this wheal larger than seems necessary. A dime is a good size to picture in your mind. In the ordinary text-book you are told to start your skin wheal and gradually extend it by running the needle along as you inject. I am not going to say that some surgeons cannot do this. I am giving my personal observations and I find that I can do this satisfactorily to myself in only a limited number of cases. As a rule I make the primary wheal, withdraw the needle and reinsert it in the edge of this one in order to continue the line of skin incision. The extra time demanded is not material. The multiple punctures when made with a small needle make no trouble. In attempting to run the needle as you inject it is very easy to get beneath the true skin.

When this happens your patient will most probably suffer pain when the needle is reinserted because the true skin has not been anesthetized the full length of the needle.

Local anesthesia should be a Godsend to the physician practicing in a small place. The necessary equipment is inexpensive and an adequate knowledge is not difficult to acquire. As a matter of fact this paper falls flat if the members present are all versed in this special work. I am endeavoring to set forth in simple detail knowledge which has been acquired after many years of experience. Any book on local anesthesia will give you the main facts, but the man that wrote that book presumed a knowledge of technicalities that the average practitioner does not possess and he is the man I am endeavoring to serve.

Let's stop now and consider the matter briefly from the standpoint of the family physician and more especially of the one that has no specialists at his beck and call. For his equipment we will furnish him with two 10 c.c. record syringes, one dozen each of the needles herein designated, also a moderate amount of ordinary operating instruments. He would keep on hand distilled water, normal salt tablets, novocain, adrenalin-solution, two or three Florintine flasks, a four-ounce bottle and a small medicine glass.

Now let him purchase two books, viz: "Surgical Shock and the Shockless Operation Through Anoci-Association," by Crile and Lower; "Regional Anesthesia," by Sherwood Dunn. There are many books on this subject, but these two stand out prominently because they are small; they contain the nut of the kernel and waste no paper in generalized discussions. For a time he should carry along his books just as he would his instruments and refer to them freely.

This family physician already has his patient's confidence. In this valuable asset he enjoys a marked advantage over the specialist, who often finds himself much handicapped by his brief contact with the individual prior to the operation.

Our family physician is now prepared to apply local anesthesia. I advise him to go slow at first, attempting only the simplest work. Before many months have gone by he will find himself accomplishing much. A general

anesthetic is a reasonably safe procedure in the hands of an expert, but a most dangerous one when administered by the average doctor. There are no expert anesthetists in the small towns; therefore, if the family physician learns to operate his necessary surgery under local anesthesia, he will have eliminated the danger incident to a general anesthetic administered unscientifically. The majority of amputations can be done painlessly by this method. A little patience, morphine repeated as needed, a little skill, at times just a whiff of ether to allay fright, and the trick is done. Lacerations of the scalp and face, emergency skull fractures, the examination and reduction of many fractures and dislocations and numerous other ailments and injuries are all amenable to ordinary skill and the exercise of common sense.

I hope I have helped someone. It is my belief that these meetings should be educational. If one has acquired special knowledge he should select these opportunities to give it to the other fellow. This is the object of my paper. I have not attempted a scientific paper all dolled up for the well-informed surgeon, but have sought to offer some helpful details to the general man. I know this data should prove useful because it has been acquired through many mistakes. There is much for me to learn yet, but the facts here set forth are tried and true, because they have stood the test of time.

BLADDER SYMPTOMS IN WOMEN.*

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Every woman who comes into our office complaining of bladder trouble or kidney trouble does not necessarily have a nephritis, but 90 per cent of these cases do have a cystitis of some degree.

Women of all ages, from the little girl to the old woman of ninety, have bladder symptoms which make them very uncomfortable. The little girl wets the bed, the old lady dribbles. The causes for these annoying symptoms are so numerous that it behooves us as conscientious practitioners to look carefully into the symptoms presented and find out the cause for the complaint. I had a little girl at one time, five years old, who could not control her urine; she had an ugly pussy green vaginal discharge; she was excoriated from the discharge and cried from pain at every voiding. She had been treated for over a year by a friend of mine, with internal medication, but he made a mistake; he made no examination other than to examine the urine. A digital examination revealed a green pussy discharge and a piece of calico ten inches long and about half an inch wide pushed well up into the vagina entirely out of sight. This child was well four days later.

I make it a rule to go through a regular routine examination on these patients and I am often very much surprised at what I find. Not a great while ago I was called to see a patient to remove a pelvic tumor. The attending physician had told her she would have to have an operation. We catheterized and removed 72 ounces of urine and, of course, the tumor disappeared. Another case: A young girl of fifteen years, daughter of very prominent people; this child was quite an artist. She had finished with all of the local art teachers and her mother was very anxious that she go to Boston for further study, but she could not go away from home because she wet the bed every night and had done this since she was four years old. She had never been able to even spend the night away from home with her playmates, which she had much desire to do, on account of this bed wetting. She had been treated for about eleven years by different physicians—all of them good men—but not one of them had made any examination except of the urine and throat. She had adenoids and tonsils removed at six, but this had no effect on the bed wetting. I sent her to the hospital, and gave her ether. An examination revealed a most thoroughly buried clitoris under a very long prepuce, with the densest adhesions I have ever seen. The adhesions were broken

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up and practically a circumcision done. This positively cured her trouble and cured it immediately. She did not wet the bed one time after this little operation.

My routine is to first have a careful chemical and microscopical examination made of a mixed specimen of urine. If this specimen is positive for pus cells, red blood cells or anything else materially wrong, then I get a catheterized specimen and this in turn is carefully examined, including a close scrutiny for tuberculosis. I next make a complete physical examination—teeth, throat, glands, chest, heart, blood and blood pressure, kidneys, abdomen and then a complete bimanual and speculum examination of all the pelvic organs. At this time, pus or mucus is massaged out of the urethra and a smear made on one end of the slide; the other end of the slide is used for making a smear from the uterine cervix. These smears are carefully examined for micro-organisms.

In the vaginal examination tears, if any, and the condition of the perineum are noted; the appearance of the urethral opening, the vaginal walls, the glands of the vulva, whether there is any sagging down of the anterior vaginal wall, the amount and character of discharge, the condition of the cervix as to tears, erosions, ulcers, discharge, its color and whether spongy or hard. Next the bladder is palpated—tenderness noted and at what point — any residual urine and what amount, the presence of stones in bladder (stones may sometimes be felt when present), the amount of tenderness by stripping the urethra. I next examine the uterus as to size, position, consistency, tenderness; then I examine first one side and then the other, and note the condition of the tubes, the size, position, and tenderness of the ovaries and look for pelvic exudates. If I am still not satisfied with my findings, I then arrange for the patient to return the next day for a cystoscopic examination which is done under a local anesthetic and at this time I thoroughly investigate the entire inside of the bladder and also catheterize the ureters, if this is indicated, to determine the condition of each kidney. An X-ray examination is made if renal calculi are suspected.

After completing this examination, I usually have a fair idea of what I have to do for my patient to give her relief and I tell her what my findings are and outline to her the form of treatment indicated. If she has been suffering, or is suffering to any marked extent with frequency, burning and those annoying symptoms which go with a cystitis, I inject, while she is still on the examining table, dram one-half 2 per cent novocain and dram one 10 per cent argyrol into the bladder with a Luer all-glass male urethral syringe and have her retain this for three or four hours. This gives her instant relief, no matter how acute her symptoms are at the time.

Some of the few very unusual conditions we might find and should keep in mind, are: A retention and distension caused by paralysis in locomotor ataxia or lateral sclerosis; pelvic abscess from appendicle abscess, which may be mistaken for enlarged full bladder; tuberculous peritonitis may simulate a full bladder—the fluid gravitating to the pelvis; rupture of the bladder from high degree of retention or from traumatism as may occur in parturition—in the New York Lying-In Hospital rupture of the bladder during parturition has occurred three times in 50,000 cases; perineal or vaginal hernia of the bladder—very rare; urethral hernia of the bladder.

As I stated before, in the greater per cent of these cases giving bladder symptoms, some form of cystitis is present. To have a cystitis it is necessary to have both a predisposing and an active cause. The predisposing causes are certain conditions which tend to produce a congestion as this provides a suitable soil for infection. Congestion of the bladder may be produced by one or more of the following: (1) Rarely, certain internal medicines in too large doses, as cantharides, turpentine, copaiba, sandalwood oil, and alcohol. (2) Local remedies which may have been used—as bichloride of mercury, carbolic acid, nitrate of silver, etc. (3) Traumatism, during parturition, rough in-

strumentation, hot cystoscopic lamp, and crushing of vesical stones. Congestion may also be produced by retention of urine, residual urine, irritation by stone in bladder, tumor of bladder, exposure to cold, wetting or chilling of feet and lower extremities, irritating urine, oxaluria, uricacidemia or ammoniacal fermentation and too frequent or rough sexual intercourse.

Congestion of the bladder may further be caused by any abnormal condition of the abdominal or pelvic tissues coming in contact with the outside of the bladder wall and interfering with its function through pulling, pushing, or pressing upon it. In such cases besides any inflammatory condition which may be present in the adjoining tissues that predisposes to cystitis, the extra work of the bladder wall in its efforts to overcome these interferences, brings an extra amount of blood to the bladder, thus producing congestion. These conditions are: displacements, tumors, or inflammation of the uterus; displacements, tumors or cysts of the ovary; inflammation of the tubes or adhesions of the tubes to the bladder or to the other tissues that drag and hold against the bladder; exudates and collections of blood or pus in front of, behind or on the side of the uterus; adhesions of the omentum or gut to the bladder, etc.

The *active* cause of cystitis is *infection.* The germs producing this infection may be the colon bacillus, staphylococcus, streptococcus, gonococcus, tubercle bacillus, pneumococcus, proteus vulgaris, and the urobacillus liquefacius septicus. The entrance of the infection takes place first, by the descending route from the kidney; second, by the hematogenous route through the circulation; third, by direct propagation up the urethra—the ascending route; and, fourth, by direct entrance from adjacent organs.

I shall not go into the subject of treatment of these cases for, naturally, the treatment indicated will be entirely referable to the disease presenting in each individual case. But, in conclusion, I want to urge that we take more careful personal histories and make more careful physical examinations when we have patients applying for relief from these annoying and oftentimes serious bladder symptoms.

PROPAGANDA FOR REFORM.

Intravenous Medication. — There are serious limitations to intravenous medication which are likely to be forgotten or overlooked in the enthusiasm for a promising procedure. They involve both disappointments and dangers. These were reviewed by Carl Voegtlin before the Section on Pharmacology and Therapeutics at the St. Louis session of the American Medical Association. Not the least in importance are the difficulties of technic which form a stumbling block for all too many physicians. Voegtlin pointed out that the chemical composition of the blood and its physicochemical properties, such as osmotic pressure, hydrogen-ion concentration and colloidal state, are maintained with remarkable constancy and appear to be essential to physiologic wellbeing. A sudden change in reaction, the production of precipitates and subsequent thrombosis in vital organs, the overwhelming of sensitive tissues, such as the cardiac and nervous structures, with high concentration of potent drugs, are a few illustrations of the untoward possibilities in a procedure that often means "more haste and less speed." (*Jour. A. M. A.*, Sept. 2, 1922, p. 828.)

More Misbranded Nostrums.—The following have been the subject of prosecution by the federal authorities, charged with the enforcement of the Food and Drugs Act: Ammonol Tablets (Ammonol Chemical Co.), containing acetanilid, ammonium carbonate, sodium bicarbonate and sodium phosphate. Johnson's Female Regulator (Logan Pharmacal Co. and the France and New York Medicine Co.), consisting of pills containing extracts of vegetable drugs. Fosfo-Ferrogen de Johnson, containing caffein and compounds of iron, quinin, strychnin, arsenic and calcium. Bick's Nerve Tonic (Palestine Drug Co.), consisting of two

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preparations, one a brown tablet containing phosphorus, phosphates, zinc and iron, and the other a pellet containing phosphate, iron and strychnin. Vitalo (Allan-Pfeiffer Chemical Co.), containing vegetable extractive matter, including damiana, nux vomica, sugar, alcohol and water. (*Jour. A. M. A.*, June 10, 1922, p. 1832.)

THE INTRAVENOUS USE OF ACACIA.—It is now generally accepted that acacia has a limited and uncertain usefulness. The intravenous use of acacia is a recent therapeutic procedure and apparently sufficient time has not elapsed for the thorough appraisal of its use as a therapeutic remedy. Bearing in mind the accidents from the use of acacia that have been reported, the lack of agreement as to its beneficial effects, among surgeons who have tried it, the experimental evidence that has been reported as to its deleterious effects and the paucity of data indicating its clinical usefulness, conservative practitioners will still withhold their verdict. Moreover, the questions of intravenous therapy which are involved in any discussion on the use of acacia in shock, hemorrhage and allied conditions, are an important and serious complicating consideration. (*Jour. A. M. A.*, June 17, 1922, p. 1897.)

HERE AND THERE.

Dr. Frederick Bowen, of Jacksonville, has returned after a vacation of several weeks spent in the Eastern hospitals.

Dr. Wm. B. Keating has located in Key West to engage in practice. He has recently severed his connection with the State Board of Health, having been in charge of Child Welfare work up to the time of retiring from Public Health activities.

Dr. H. H. Harris recently returned to Jacksonville after taking post-graduate work in the East.

Dr. Louis Limbaugh, of Jacksonville, spent a short vacation in Baltimore.

Dr. L. M. Anderson, of Lake City, was a Jacksonville visitor during the month.

X-RAY AND CLINICAL FINDINGS IN NORMAL CHEST.

(Of children, 6 to 10 years.)

NATIONAL TUBERCULOSIS ASSOCIATION MEDICAL RESEARCH.

The National Tuberculosis Association sometime ago began a new and important phase of its work in an attempt to increase the quantity and character of research work in problems related to its own field in the United States. For this purpose it appropriated $20,000 and appointed a small committee composed of Dr. Wm. Charles White, Medical Director of the Tuberculosis League of Pittsburgh; Dr. Paul A. Lewis, Director of Laboratories of the Phipps Institute, Philadelphia, and Dr. Allen K. Krause, Director of Kenneth Dows Research Fund, Johns Hopkins Hospital, to expend these funds to the greatest advantage.

This committee decided that the best use of these funds would be in assisting researches already under way that held the greatest promise of increasing the practical knowledge of physicians dealing with tuberculosis. This, they considered, would bring the greatest help to those suffering from tuberculosis and the greatest boon to the public from whom the funds were collected. This plan has been carried out in cooperation with the universities.

One of the researches was an effort to establish the x-ray and clinical findings in the chest of a normal child up to ten years of age. For this problem the National Tuberculosis Association nominated the following groups of rœntgenologists and clinicians:

Dr. H. K. Pancoast and Dr. H. R. M. Landis, University of Pennsylvania.

Dr. F. H. Baetjer and Dr. C. R. Austrian, University of Johns Hopkins.

Dr. H. K. Dunham and Dr. K. B. Blackfan, University of Cincinnati.

The signed reports of these physicians is here presented in two sections, with the hope that they may promote a discussion which will be fruitful in establishing the truth in these two fields:

THE X-RAY AND CLINICAL FINDINGS IN THE NORMAL CHEST OF THE CHILD.

Report of the Clinical Division of the Committee on Medical Research of the National Tuberculosis Association.

The value of rœntgenography in determining the presence of pulmonary disease has long been recognized. Studies to determine the rœntgenograms of various pathological lesions of the lung have been almost without number, yet much difference of opinion exists in the interpretation of findings, largely because no satisfactory observations have been made establishing the variations that may occur in the normal. To one observer, shadows noted are indicative of disease; to another, they are not evidence of a pathological process; to one, they represent lesions of clinical significance; to another, they suggest changes of no moment. The realization of this unsatisfactory state of affairs was widespread, but it remained for the Research Committee of the National Tuberculosis Association seriously to consider it and to set about to correct the shortcomings.

In the spring of 1920, that committee called together the collaborators in this work and instructed them to set about in ways of their own choosing to solve the problem, extended to them a financial grant and, in order that the problem might be a very definite one, asked that the immediate study be limited to a consideration of the chests of normal children between the ages of 6 and 10 years. The work was begun promptly and a preliminary report was made at the annual meeting of the association in May, 1921. The findings at that time were incomplete and because of the then limited observations, no very definite conclusions were drawn. However, the practical need of a solution of the problem was apparent. Study was continued throughout 1921 and the first four months of 1922, and the data independently assembled were jointly discussed to evaluate them. Although each pair of workers carried on its investigations without intergroup consultation, although each approached the subject

from a different angle and when first met held views apparently not altogether in accord, it was agreeable to find that an exchange of conclusions disclosed almost an unanimity of opinion. The findings of these six observers—three clinicians and three rœntgenologists — are presented to you for your consideration:

Theoretically, the normal child is one of ideal height, weight and development for his age, without subjective or objective evidences of deformity or of disease and without residual changes due to antecedent pathological processes. Practically, a normal child is one of average height, weight and development for his age, symptom-free and without signs of disease. Each such individual, in more or less relation to his age, will have been ill more or less often and as a consequence may be expected to show variations from the ideal, not because of present disease, but as a result of residual changes that persist. An appreciation of these facts makes it apparent that the findings, clinical and rœntgenographic, in normal children as we meet them will vary greatly from any fixed standards and still must be considered as variants of normal.

The clinical data dealt with in this report were obtained by careful examination of apparently healthy children between the ages of 6 and 10 years. All children who showed signs of disease were excluded from the series. Individuals from various strata of society, foreign and native born, residents of urban and of rural communities, school children and children residing in institutions, children exposed to tuberculosis and some without a history of such exposure, children with and without a history of previous infectious diseases, all symptom-free, and of an approximately normal height and weight for their ages, were studied. A history of each individual was recorded and in making the examinations of the chest, care was always observed to have the child relaxed and to see that no cramped or unnatural posture was assumed, for, as is well known, faulty position may lead to findings that cause confusion in interpretation. In addition, a tuberculin test was made on every child. The clinical data were then assembled and after the rœntgenologist had interpreted his plate independently, the clinical and rœntgenographic findings were correlated.

In all, over 500 children were thus studied and as a result some definite conclusions seem warranted.

As in the adult, so in the child vocal fremitus is more marked over the right upper chest than over the left.

It is generally stated that the percussion note elicited over the lungs of normal children within the age limits under consideration, is fuller, more tympanitic, of higher pitch and more resilient than that noted over those of adults, and that frequently the tympanitic quality is quite outspoken, especially over the lower lobe of the left lung. Although in general our observations confirmed this view, we have been impressed by the fact that in an appreciable number of such children, the note obtained on percussion over the lungs is indistinguishable in quality from that elicited over the lungs of normal adults and that the usual resilience of the note is lacking. These findings in many instances have an analogue in shadows noted in the x-ray films, shadows indicative of increased density along the bronchial tree, similar to those seen in the plates of normal adults. This correlation of the findings on physical examination and on x-ray study is more constantly possible in studies of the upper half of the chest. When minor changes, similar to those discovered by x-ray examination of the upper lobes, occur in the bases, they usually escape detection on physical examination. In those instances, in which no shadow is found to explain the deviation of the note from the generally accepted one, it is our belief that the lack of resilient quality

may be due to a decreased elasticity of the chest wall.

The so-called tympanitic quality of the percussion note over the left base may be increased, decreased or be entirely lacking, depending upon the degree of distention of the stomach or colon, the curvature of the spine, and may likewise vary with the position of the diaphragm or with the posture of the child during the examination. The note over the upper thorax is often the same on the two sides. Kronig's isthmus averages 5 to 6.5 cm. in width. The lower margins of the lungs posteriorly are at the level of the tenth or eleventh rib and descend from 1.5 to 3.5 cm. during forced inspiration.

A just detectible diminution of resonance over the apical regions is of no significance unless associated with a modification of the breath sounds in those areas or with other abnormal ausculatory findings.

It is generally accepted that normally in childhood, the breath sounds have a harsh, sharp character, with expiration longer and better heard than in the normal adult. This so-called puerile breathing is physiological and though it may seem trite, let it be emphasized that this exaggerated vesiculobronchial respiratory murmur, especially well heard in the areas overlying the great bronchi (*i. e.*, anteriorly at the level of the first interspace and the second rib just lateral from the sternal margins, and posteriorly, particularly on the right side, at the level of the second to the fourth spine) is often incorrectly interpreted as evidence of pulmonary disease. An ausculatory finding that has not been pointed out, or at least, has not been emphasized, has come forcibly to our attention in carrying out this study. Just as the full, deep note or higher pitch characteristically elicited by percussion of the child's chest is often replaced in health by a note more like that produced when one percusses the normal chest of an adult, so, on auscultation of a child's normal lungs, the exaggerated or puerile breath sounds may be lacking, and instead the so-called vesicular respiratory murmur characteristically present in adult life is heard. This finding, regarded by us as a physiological variation, has been noted as early as the age of four years and may perhaps occur in younger children. It is more readily appreciated and more often found than the variation in the percussion note just described. In more than 50 per cent of the children in which this type of breathing was heard, examination with the x-ray gave findings like those obtained by a study of normal adult chests. In fact, the agreement of clinician and rœntgenologist was so constant that we have come on the basis of these variations to designate the chest of normal children as of "puerile" or of "adult" type. The essential fact to be stressed is that so-called vesicular respiration is heard with great frequency in normal children, and is to be regarded as a variation of normal and not necessarily as an indication of disease.

These variations and those of the percussion note are more generally found in children with a history of infections of the respiratory tract. No satisfactory explanation for this finding is offered. It may be due in part to altered resilience of the chest wall, a suggestion supported by the fact that in some instances in which it was noted, diminished elasticity of the thoracic wall was apparent on percussion. It may stand in relation to variations of elasticity of the parenchyma of the lung. It may be due to a relative narrowing of the lumen of the bronchial tree. It is hardly to be considered evidence of increased density of respiratory tissue, for, theoretically, at least, that should lead to a modification towards bronchial breathing.

Concerning the whispered voice sounds, little comment needs to be made other than to emphasize their loud transmission often with syllabation over the region of the major bronchi. Ausculation of these sounds over the upper thoracic spine of the children has led to the conclusion that D'Espine's sign as indicative of enlarged tracheobronchial lymph nodes is, to say the least, of doubtful value. In twenty-three of the children, this

sign was elicited without other signs of a mediastinal mass and without any corroborative evidence on x-ray examination. In three, the sign could not be elicited, although from the x-ray plate it might have been inferred that it should be. Eustace-Smith's sign is so generally present in normal children that it is of little or no practical diagnostic worth. The presence of these two signs together with impairment of resonance in the interscapular region is all too frequently made the premises for a diagnosis of tuberculosis of tracheobronchial lymph nodes. This is unwarranted for, as indicated, these signs are unreliable evidence of a pathological condition and the determination of a diminution of resonance in the interscapular region requires such a nicety of technic that even masters of percussion disagree as to the presence or absence of significant findings in this region of the chest.

A year ago, in the preliminary communication to this Society, we stressed the importance of the role that antecendent infections might play in the production of areas of increased density within the respiratory tract. (Bronchial tree, parenchyma of the lungs, etc.) This fact is reemphasized, for further study has established the importance of it. Not only may recognized or remembered infections of the bronchi and lungs be responsible for alteration in these tissues, but other diseases not ordinarily considered of significance in this regard may be causal of such changes. For example, our observations indicate that after measles, pertussis or tonsillar infections, areas of increased density radiating from the hilum into the bases especially, occur with great frequency. Such lesions generally are not discoverable on physical examination and would be unsuspected but for the use of the x-ray. They are referred to in the clinical part of our joint report in order to point out the need of a careful history as well as examination in all individuals, before proceeding finally to interpret the findings of the rœntgenologist. By way of digression, it may be interesting to point out the fact that though measles and pertussis have been known to produce lesions in the upper air passages, involvement of the lower tract has been considered a complication and was thought to occur only when evidence of bronchitis or of broncho-pneumonia were discovered. Our observations indicate that there may be a mild inflammatory process throughout the respiratory passages in a large percentage of the so-called uncomplicated cases of these diseases. This suggestion warrants further study in relation not only to the infections under consideration but also other infectious diseases. That such shadows, mediastinal and basal, noted in children who give a history of uncomplicated measles and pertussis are evidence of healed processes is evidence by the experience that similar shadows of like origin have remained unchanged and without the development of clinical symptoms in a series of children observed from 3 to 5 years. Such changes must be properly evaluated as indices, not of present disease, but of lesions past and healed, not as warrant for the diagnosis of present illness and the institution of treatment, but as scars of infections met and overcome.

Most of the children included in this study were tested with tuberculin — some were given a cutaneous test with old tuberculin (Pirquet)—others were tested by the intracutaneous method (Craig).

The foregoing facts have been detailed at some length to establish the major thesis that, clinically, the ideal, normal child is a hypothetical impossibility. Children, apparently healthy, symptom-free and active, show on careful examination many deviations from fixed standards, variations that must be interpreted as within physiological limits; standards of height and weight must be elastic; measures of resonance and of resilience of the chest must not be rigid and estimates of acoustic phenomena must permit of a range of difference from the ideal. These facts, clinical experience establishes beyond peradventure, and they suggest a corollary,

namely, that x-ray examination of the chest of such children may be expected to show comparable deviations from a fixed ideal rœntgenogram.

The studies reported, fortified by past experience, warrant the following conclusions:

(1) The data obtained on percussion and auscultation of the lungs of normal children show wide variations from a fixed standard. These variations are usual and are considered to be within normal limits.

(2) Inasmuch as the changes referred to are dependent often upon alterations that persist as the residual of past infections of the respiratory tract, it is obvious that a careful anamesis, with special reference to all infections, is necessary if diagnostic errors are to be avoided. Even a history carefully taken is often unreliable, as minimal infections are soon forgotten by many and among the unintelligent classes even more significant indispositions are not readily recalled.

(3) Failure properly to evaluate these deviations from a fixed standard will often lead to the unwarranted diagnosis of disease and to even less justifiable treatment.

(4) With a proper appreciation of the widest variations that the normal may present from the ideal, the informed clinician is better able correctly to understand the findings of the rœntgenologist, and each, cooperating with the other, is less liable to error.

(5) D'Espine's sign as indicative of enlarged tracheobronchial lymph nodes is of little value.

(6) Recognition of and familiarity with the foregoing data is of cardinal and practical importance to every patient, potential and established. Without a proper appreciation of the facts set forth, no intelligent differentiation between a normal and an abnormal respiratory tract can be made.

In brief, to establish the presence or absence of disease, it is imperative that all data—clinical, laboratory and rœntgenographic—must be evaluated and correlated and that no one fraction of the evidence be stressed to the exclusion of the others.

(Signed) C. R. AUSTRIAN,
H. R. M. LANDIS,
KENNETH D. BLACKFAN.

May 6, 1922.

THE X-RAY AND CLINICAL FINDINGS IN THE NORMAL CHEST OF THE CHILD.

Report of the X-Ray Division of the Committee on Medical Research of the National Tuberculosis Association.

It is generally conceded that one of the most important factors in accurate interpretation of the appearance of morbid processes in the rœntgenogram of the thorax is a thorough familiarity with the normal and variations therefrom within normal limits. With a full realization of this in view the National Tuberculosis Association in 1920 appointed a committee comprising three rœntgenologists and three internists to make a study of the normal chest of the child between the ages of six and ten years. This group was instructed to work in cooperation and to make a report of their investigations before the Association when their studies were completed and their conclusions reached. The members selected for the committee were Dr. H. Kennon Dunham, of Cincinnati; Dr. Frederick H. Baetjer, of Baltimore, and Dr. Henry K. Pancoast, of Philadelphia, to act in the capacity of rœntgenologists and to work in cooperation with the respective internists in the same cities, Dr. Kenneth Blackfan, Dr. Charles R. Austrian and Dr. H. R. M. Landis. Each group of two was to work independently until a satisfactory number of individuals were examined and the entire committee was then to meet and draw their conclusions for presentation. It was to be the duty of the internist in each group by careful clinical study to select as nearly normal children as possible for examination by the rœntgenologist. The entire procedure was to be carried out with strict cooperation between the two members of each group.

It was soon realized by the x-ray members of the groups that an attempt to describe a

normal chest was practically impossible. Their endeavors soon began to centre around the description of a theoretical normal with wide variations that would serve as a basis for the interpretation of abnormal appearances and tend to preclude the possibility of erroneous diagnoses being based upon faulty interpretations of hilum shadows, trunk shadows and linear markings more or less altered in appearance by the frequent respiratory infections of children. They realized that herein had existed the greatest source of error in interpretation, and no doubt the Association had this same thought in mind when the committee was appointed to take up these investigations. Errors in interpretation have been made chiefly in connection with the diagnosis of pulmonary tuberculosis.

It was the concensus of opinion that children are probably more apt to show definite x-ray evidences in the hilum and trunk shadows of simple as well as serious respiratory infections than adults. Practically all children of the ages of those examined have had at one time or another one or more respiratory infections, especially measles and whooping cough, that are likely to produce very apparent changes in the shadows mentioned and which will remain distinctly visible for a variable period of time. These apparent deviations from the normal are not necessarily abnormal when observed, but may be the harmless results of one or more infections. No doubt such appearances have many times been misinterpreted as evidences of tuberculosis. In the conclusions reached by the committee the attempt has been made to preclude this possibility.

Many of the general observations made have not been included in the conclusions. One of those perhaps worth mentioning is the fact that the heart of the child is found to extend relatively farther to the right than in the adult.

The thoroughness with which the studies were carried out may be in part realized from the number of individuals examined. Over five hundred children were selected from all strata of life, as stated in the clinical report of the committee.

The groups comprising the committee met at the Phipps Institute, Philadelphia, March 3, 1922. Prior to this meeting there were misgivings as to the possibility of an agreement upon any very definite conclusions, but much to the satisfaction of all the members a definite agreement was reached and the conclusions were completed after a few hours' careful deliberation.

Conclusions of the X-Ray Division of the Committee.

THE NORMAL CHEST.—The normal chest of the child from the rœntgenologic standpoint is subject to such wide variations within normal limits as to be beyond the possibility of exact description.

HILUM SHADOW. — The conglomerate shadow commonly called the hilum shadow, when found lying entirely within the inner third or zone of the lung area can be disregarded (or regarded as normal), except where it is made up of a solid mass of homogeneous shadow giving undoubted evidence that it represents a growth or mediastinal pleurisy.

CALCIFIED NODES.—Calcified nodes at the root of the lung, without evidence of lung disease, are of no significance except as a possible evidence of some healed inflammatory condition, possibly but not necessarily tuberculosis. They are a common finding in normal chests.

DENSITY AND THICKNESS OF TRUNK SHADOWS.—In the normal lung the bronchial trunk shadows are not visible in the extreme apical regions. For convenience of description the remainder of the lung is divided into three vertical zones, extending outward from the lateral border of the spinal shadow to the lateral chest border.

The inner zone contains the root shadows.

The mid zone contains the trunk shadows, gradually fading out into their final subdivisions.

The peripheral zone contains radiating lines from these and fading off before the periphery is reached.

Where in the mid zone or peripheral zone, these shadows do not disappear in the characteristic fashion described, the appearance may be evidence of a variety of conditions, past or present, of an inflammatory nature or otherwise. It may accompany a tuberculous process but is not necessarily indicative of tuberculosis.

IMPROPER OR MISLEADING TERMS. — The use of the terms "peribronchial tuberculosis" and "parenchyma tuberculosis" is not to be recommended in the interpretation of rœntgenograms of the chest. Until corroborated by laboratory or clinical findings, the use of the terms "active" and "quiescent" should not be definitely applied to evident lesions demonstrated on plates.

(Signed) HENRY K. PANCOAST,
KENNON DUNHAM,
May 6, 1922. F. H. BAETJER.

PUBLISHER'S NOTES

IMMUNIZATION AGAINST DIPHTHERIA.

In reference to diphtheria, as has long been the case in the control of smallpox, the medical profession is demonstrating that its function is not alone the treatment of disease, but its prevention. For diphtheria can be prevented, just as smallpox is—and by the same means, vaccination. There are minor differences, but the principle of immunization is the same. Natural immunity to diphtheria is largely a matter of age; it is a children's disease, though not all adults are exempt. Protect the children, and you protect the community. This is done, in a measure, by the use of antitoxin, but not completely. Why should the child be allowed to take any chances at all? No one can foretell the virulence of a diphtheritic attack, and in waiting for development a case of "sore throat" may turn out to be malignant diphtheria challenging even heroic doses of antitoxin to subdue it, or ending the life of the patient through delay and temporizing treatment.

Why not prevent all this when it can be prevented by the systematic application of the toxin-antitoxin mixture known as diphtheria prophylactic? Every physician should take an interest in this subject, we believe, and extend, so far as his influence goes, the protective barricade against the spread of diphtheria.

The standardized toxin-antitoxin mixture is supplied in packages suitable for private and institutional practice by Parke, Davis & Co., who also offer appropriate literature to inquiring physicians.

NEW AND NONOFFICIAL REMEDIES.

FERRO SAJODIN. — FERIOBEN. — Ferro-sajodin is a basic, ferric iodobehenate, containing at least 5 per cent of iron and at least 24 per cent of iodine. It has the actions of iodides and iron, but is claimed to be more stable and palatable than ferrous iodide, not to injure the teeth or to disturb the gastro-intestinal tract and that it is free from a constipating tendency. It is claimed that ferro-sajodin is easily absorbed but slowly eliminated, thus insuring a more prolonged effect than that obtained from inorganic iodides and iron compounds. Ferro-sajodin is indicated in conditions in which iron and iodides are employed, such as anemia, rickets, syphilis, chronic bronchitis and arteriosclerosis with anemia. Ferro-sajodin is marketed only in the form of Ferro-sajodin tablets, 8 grains. Winthrop Chemical Co., Inc., New York. (*Jour. A. M. A.*, Sept. 30, 1922, p. 1136.)

TUBERCULIN OINTMENT FOR THE MORO TEST.—A preparation of tuberculin-Koch (see New and Nonofficial Remedies, 1922, p. 293) marketed in collapsible tubes containing 2 gm. of an ointment consisting of 50 per cent of tuberculin-Koch and 50 per cent of anhydrous wool fat. Parke, Davis and Co., Detroit. (*Jour. A. M. A.*, Sept. 9, 1922, p. 897.)

ANTIGONOCOCCIC SERUM (See New and Nonofficial Remedies, 1922, p. 285).—Also marketed in bulbs, containing 12 c.c. Parke, Davis & Co., Detroit.

NOVOCAIN AND L-SUPRARENIN TABLETS "H."—Each tablet contains novocain 0.06 gm. (1 grain) and suprarenin synthetic 0.00006 gm. (1-1000 grain). For a discussion of the actions, uses and dosage of procaine, see New and Nonofficial Remedies, 1922, p. 36. H. A. Metz Laboratories, Inc., New York. (*Jour. A. M. A.*, Sept. 23, 1922, p. 1049.)

TUBERCULIN (OLD) AND CONTROL FOR THE PIRQUET TEST.—A preparation of tuberculin-Koch (see New and Nonofficial Remedies, 1922, p. 293) marketed in packages containing three sealed glass tubes of tuberculin, each tube containing tuberculin sufficient for one test and three tubes of control material. Parke, Davis and Co.

ANTITETANIC SERUM (See New and Nonofficial Remedies, 1922, p. 282).—Also marketed in piston syringe containers, containing, respectively, 3,000, 5,000 and 10,000 units. Parke, Davis & Co., Detroit.

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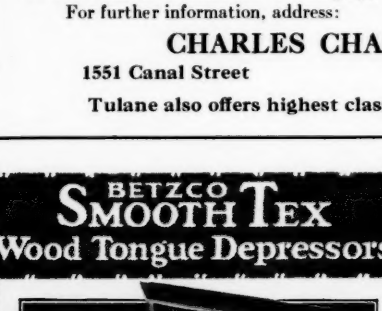

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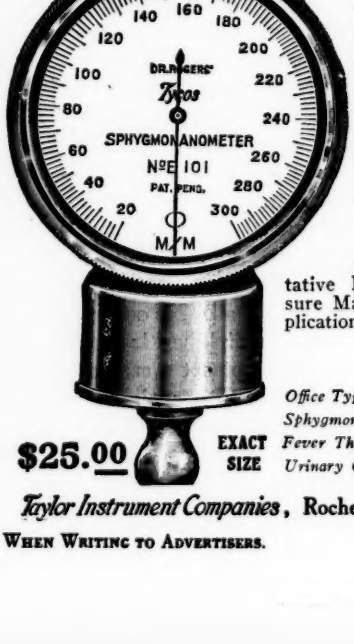

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